Annapolis Ohlson Ranch Formation Highlands Groundwater Basin

- Groundwater Basin Number: 1-49
- County: Mendocino, Sonoma
- Surface Area: 8,655 acres (13.5 square miles)

Basin Boundaries and Hydrology

The Annapolis Ohlson Ranch Formation Highlands consist of a series of discontinuous, uplifted sedimentary deposits that lie along the northern California coastal region within Sonoma and part of Mendocino Counties. This formation is exposed in a discontinuous band approximately 4 to 12 miles inland from the coastline which spans a distance of approximately 30 miles from the Sonoma-Mendocino County line to about Salt Point State Park. The Annapolis Ohlson Ranch Formation Highlands Groundwater Basin is defined by the areal extent of these deposits. The main trace of the San Andreas Fault Zone is located directly west of this basin and several fault splays trend northwest through the basin (DWR 1975).

Precipitation along the Annapolis Ohlson Ranch Formation Highlands ranges from approximately 36 to 49 inches per year.

Hydrogeologic Information

Water Bearing Formations

The main water bearing formation in the area is the Ohlson Ranch Formation. This formation is underlain by consolidated bedrock of the Coastal Belt Franciscan Complex. The Franciscan Complex is considered non-water bearing, although it can yield enough water to wells for domestic uses. Information on the bedrock formations and groundwater conditions was taken primarily from DWR (1975).

Ohlson Ranch Formation. The Ohlson Ranch Formation consists of marine sandstone, siltstone, and conglomerate, ranges from about 20 to 160 feet in thickness, and caps ridge tops. The formation is Pliocene in age and is similar in appearance to the Merced Formation. This formation occurs primarily within the northwestern part of Sonoma County in the vicinity of the town of Annapolis and also in part of southwestern Mendocino County. Reported yields from wells penetrating this formation range from 2 to 36 gpm. It is reported that some wells completed in this formation go dry in the fall months.

Groundwater Level Trends

No hydrographs are available in order to evaluate long-term water level trends.

Groundwater Storage

Groundwater Storage Capacity. No information is available on groundwater storage capacity for this basin.

Groundwater in Storage. No groundwater in storage estimates are available.

Groundwater Budget (Type C)

There are insufficient data available in order to prepare a groundwater budget for this basin.

Groundwater Quality

Characterization. Limited data from wells in the Annapolis area indicate that sodium bicarbonate water of excellent quality is available from wells penetrating this formation. Analyses of one water supply well in the basin indicates TDS levels at 260 mg/L.

Impairments. No impairments were identified.

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	1	0
Radiological	0	0
Nitrates	1	0
Pesticides	1	0
VOCs and SOCs	1	0
Inorganics – Secondary	1	0

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

	Well yields (gal/min)	
	Wells tapping the Ohlson Ranch Formation have reported well yields of 2 to 36 gpm with drawdowns ranging from 30 to 125 feet (DWR 1975).	
	Total depths (ft)	
Domestic	Range: 80 – 260	Average: 196 (Based on 21 well completion reports)
Municipal/Irrigation	266	(Based on 1 well completion report)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR and cooperators	Groundwater levels	None.
DWR and cooperators	Miscellaneous water quality	None.
Department of Health Services and cooperators	Title 22 water quality	1 well / annually

Basin Management

Groundwater management:	No groundwater management plans identified.
Water agencies	
Public	Mendocino County W.A., Sonoma County W.A.
Private	

References Cited

California Department of Water Resources (DWR) 1975. Evaluation of Ground Water Resources: Sonoma County. Volume 1: Geologic and Hydrologic Data. December.

Additional References

California Department of Water Resources (DWR) 1958. Recommended Water Well Construction and Sealing Standards, Mendocino County. Bulletin No. 62 – November.

California Department of Water Resources (DWR) 1965. Water Resources and Future Water Requirements – North Coastal Hydrographic Area, Volume 1: Southern Portion (Preliminary Edition) – Bulletin No. 142-1. April.

California Department of Water Resources (DWR) 1975. California's Ground Water. Bulletin 118-75. September.

Higgins, C.G. 1960. Ohlson Ranch Formation. University of California Publications in Geological Sciences. Vol. 36, No. 3.